

What is claimed is:

1. A magnetic metal powder having fluidity which is composed of magnetic metal particles whose main components and the contents thereof are represented by the following general formula (1):



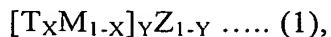
where T is one or both of Fe and Co, M is one or both of Pt and Pd, Z is at least one member selected from the group composed of Ag, Cu, Bi, Sb, Pb and Sn, X represents 0.3 ~ 0.7, and Y represents 0.7 ~ 1.0, the balance being impurities unavoidably incorporated during production,

which magnetic metal powder has a volumetric ratio of ferromagnetic structure (face-centered tetragonal ratio) as measured by Mossbauer spectroscopy in the range of 10 ~ 100%, saturation magnetization σ_s of 20 emu/g or greater, and average primary particle diameter by transmission electron microscopic observation (TEM) of 30 nm or less.

2. A magnetic metal powder according to claim 1, which has a magnetic anisotropy H_k by magnetic torque measurement of 10.0 kOe or greater.

3. A magnetic metal powder according to claim 1 or 2, which has an average primary particle diameter of 20 nm or less.

4. A method of producing a magnetic metal powder comprising a step of producing a magnetic metal powder composed of magnetic metal particles of a substance represented by the following general formula (1):



where T is one or both of Fe and Co, M is one or both of Pt and Pd, Z is at least one member selected from the group composed of Ag, Cu, Bi, Sb, Pb and Sn, X represents 0.3 ~ 0.7, and Y represents 0.7 ~ 1.0, the balance being impurities unavoidably incorporated during production,

in which step metal salts containing the T and M components and if required the Z component are dissolved in a solvent composed of a

polyalcohol or a derivative of a polyalcohol and having a boiling point of 270 °C or higher, holding the solution at a temperature of 270 °C or higher to reduce the metal salts with the polyalcohol or polyalcohol derivative and synthesize particles of the substance by the reduction,

at which time the synthesized particles, in their state as synthesized, have a volumetric ratio of ferromagnetic structure (face-centered tetragonal ratio) as measured by Mossbauer spectroscopy in the range of 10 ~ 100%, saturation magnetization σ_s of 20 emu/g or greater, and average primary particle diameter by transmission electron microscopic (TEM) observation of 30 nm or less.

5. A method of producing a magnetic metal powder according to claim 4, wherein the polyalcohol is one or both of triethylene glycol and tetraethylene glycol.

6. A method of producing a magnetic metal powder according to claim 4 or 5, wherein the salts of the T, M and Z components are acetylacetonates of these components.

7. A method of producing a magnetic metal powder according to any of claims 4 to 6, wherein the solution is held at a temperature of 270 °C or higher for a period of 1 hour or more.